

AMENDMENTS TO THE CLAIMS

1. **(Currently amended)** A surface-treating process, comprising:
~~_____ wherein mechanically polishing~~ an inner surface of a vacuum member ~~is mechanically polished~~ in the presence of a liquid medium, or a liquid medium and an oxidizing material,
wherein the liquid medium includes no hydrogen atom, and
wherein the liquid medium including no hydrogen atom is a liquid at an ordinary temperature and an ordinary pressure and a saturated hydrocarbon in a molecule of which a hydrogen atom or hydrogen atoms are all substituted with a fluorine atom or fluorine atoms.
2. **(Cancelled)**
3. **(Currently amended)** A ~~The~~ surface-treating process according to claim 1, wherein the vacuum member is made of one kind or two or more kinds selected from the group consisting of niobium, titanium, stainless steel, copper, aluminum and iron.
4. **(Currently amended)** A ~~The~~ surface-treating process according to claim 1, wherein the vacuum member is made of niobium.
5. **(Currently amended)** A ~~The~~ surface-treating process according to claim 1, wherein the vacuum member is a superconducting accelerating cavity.
6. **(Currently amended)** A ~~The~~ surface-treating process according to claim 1, wherein the mechanical polishing is performed in the presence of an oxidizing material.
7. **(Currently amended)** A ~~The~~ surface-treating process according to claim 6, wherein the oxidizing material is ozone, a mixture of ozone and oxygen, or hydrogen peroxide water.
8. **(Currently amended)** A ~~The~~ surface-treating process according to claim 1, wherein

after the mechanical polishing, the inner surface of a vacuum member is subjected to chemical polishing or electrochemical polishing.

9. **(Currently amended)** A ~~The~~ surface-treating process according to claim 1, wherein after the mechanical polishing, the inner surface of a vacuum member is subjected to electrochemical polishing using an electrolytic solution including an oxidizing material.

10. **(Currently amended)** A ~~The~~ surface-treating process according to claim 9, wherein the oxidizing material is ozone, hydrogen peroxide water or nitric acid.

11. **(Currently amended)** A forming process for a vacuum member, comprising:
~~_____ wherein mechanically forming the vacuum member is mechanically formed in the~~
presence of a liquid medium, or a liquid medium and an oxidizing material,
wherein the liquid medium includes no hydrogen atom, and
wherein the liquid medium including no hydrogen atom is a liquid at an ordinary temperature and an ordinary pressure and a saturated hydrocarbon in a molecule of which a hydrogen atom or hydrogen atoms are all substituted with a fluorine atom or fluorine atoms.

12-13. **(Cancelled)**

14. **(Withdrawn)** An electrolytic polishing solution including an oxidizing material and used in electrochemical polishing of a vacuum member.

15-16. **(Cancelled)**

17. **(New)** A surface-treating process comprising:
(a) mechanically polishing an inner surface of a vacuum member in the presence of a liquid medium, or a liquid medium and an oxidizing material,
wherein the liquid medium includes no hydrogen atom, and

wherein the liquid medium including no hydrogen atom is a liquid at an ordinary temperature and an ordinary pressure and a saturated hydrocarbon in a molecule of which a hydrogen atom or hydrogen atoms are all substituted with a fluorine atom or fluorine atoms; and

(b) electrochemically polishing the inner surface of a vacuum member using an electrolytic solution including an oxidizing material.

18. **(New)** The surface-treating process according to claim 17, wherein the oxidizing material is ozone, hydrogen peroxide water or nitric acid.

19. **(New)** The surface-treating process according to claim 17, wherein the oxidizing material is nitric acid.